

January 21, 2020

Perspectives of Stanford Students with a Disability



# ENGR110/210

## Perspectives in Assistive Technology



David L. Jaffe, MS  
Instructor

14  
Years

# Questions?





# Team Projects

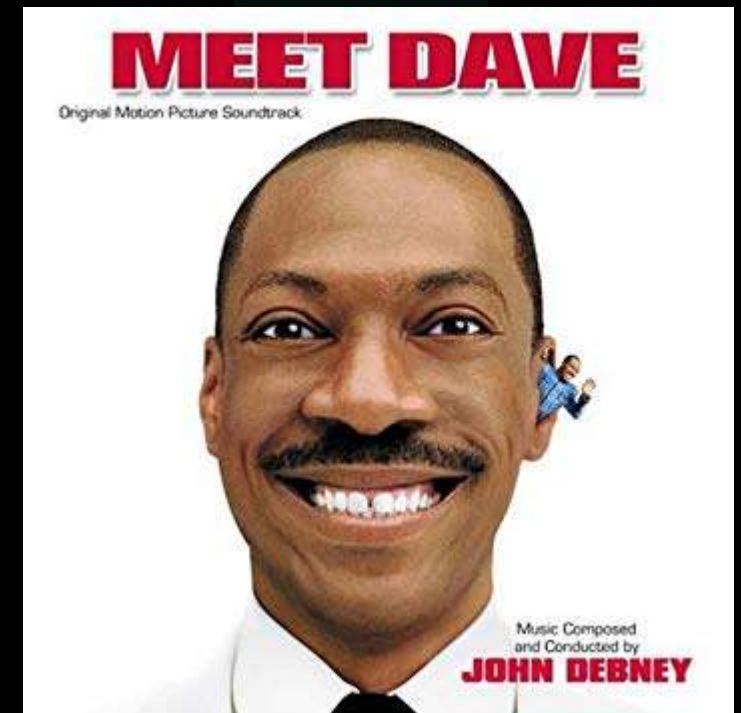
- ▶ Attend PRL safety session & purchase Shop pass
- ▶ Report team project progress
- ▶ Connect with your project suggestor
- ▶ Understand the problem
- ▶ Meet with Dave



# Benefits of meeting with Dave



- ▶ Make up missed lectures
- ▶ Gain valuable perspectives on your Team or 1 & 2 credit unit Project
- ▶ Optimize your course and project experience
  - ▶ Receive best grade
  - ▶ Minimize fabrication time
  - ▶ Maximize prototype functionality
- ▶ Get a chocolate chip cookie



# Classic Rock

- ▶ AC / DC
- ▶ Beatles (4)
- ▶ Bob Dylan
- ▶ Eagles (2)
- ▶ ELO
- ▶ Grateful Dead
- ▶ Hawkwind
- ▶ Kings of Leon
- ▶ Led Zeppelin
- ▶ Los Bravos
- ▶ Lynrd Skynyrd
- ▶ Muse
- ▶ Pink Floyd
- ▶ Queen (4)
- ▶ Red Hot Chili Peppers
- ▶ RHCP
- ▶ Rolling Stones
- ▶ Velvet Underground



# How we judge others



- ▶ race
- ▶ religion
- ▶ gender
- ▶ gender identity
- ▶ skin color
- ▶ appearance – glasses, hair style
- ▶ clothing & shoes
- ▶ anatomy - height, weight, nose, eye color
- ▶ university attended
- ▶ year in school
- ▶ major
- ▶ political affiliation
- ▶ sport team fan
- ▶ disability
- ▶ age
- ▶ speech / accent
- ▶ medical status
- ▶ immigration status
- ▶ employment status
- ▶ fame / notoriety
- ▶ criminal record
- ▶ driving record
- ▶ place of residence
- ▶ athleticism
- ▶ record of achievement, intelligence
- ▶ material possessions - car, house, phone

The course instructor judges your project effort including presentations and reports

# Dr Martin Luther King Jr.



How might the teachings of Dr Martin Luther King Jr. relate to people with disabilities and older adults?

“I have a dream that **my four little children** will one day live in a nation where they will **not be judged by the color of their skin** but by the **content of their character.**”





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*Disability and advanced age do not represent weaknesses of character.*



# Product Pricing



Product pricing includes much more than cost of materials

# Product Pricing



- ▶ **One Time Costs** - Manufacturing equipment and equipment leases, furniture, fixtures, computers, phones, etc
- ▶ **Recurring Costs** - Property and office rent, salaries (labor) / wages/ commissions, utilities (electricity, internet, water, garbage, etc)
- ▶ **Product-related Costs** - Product research, prototyping, testing, accounting, shipping, parts, profit, advertising (printing), packaging, vehicles
- ▶ **Business-related Costs** - Loan repayments, inventory, financing costs, damaged merchandise, operating and legal expenses, overhead, theft, insurance, membership dues, market research, advertising and promotion, office supplies and equipment, travel, recruiting
- ▶ **Production-related Costs** - Economies of scale, automation, mass production techniques
- ▶ **Scale-related Costs** - Retail price falls with number of units manufactured & sold

# Student Projects from 2019



STUDENT  
PROJECT  
GALLERY



# Secure Shopping Project for Abby



Explore ways to provide Abby, a power wheelchair user, a way to hold items she wishes to purchase while grocery shopping.

# Pain-free Buckles for Abby's Service Dog



Explore solutions that will make it easier and less painful for Abby to operate buckles on her service dog's harness.

# Elevator Button Pusher for Angie



Explore device designs that would enable Angie to ride elevators independently

# Lap Tray for Danny



Explore designs that would provide Danny with a lap tray that he can easily deploy and stow given his reduced arm range of motion and limited hand dexterity.



# Water Bottle & iPhone Holder for Danny



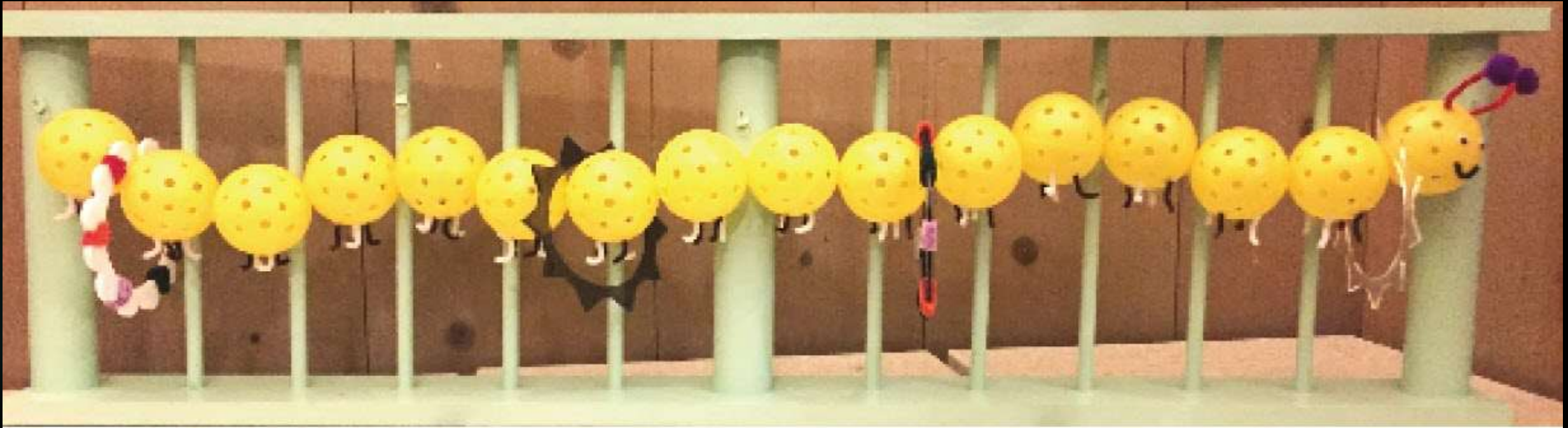
Explore designs that would provide Danny with a device that would hold his water bottle and iPhone while using his manual wheelchair.

# Pick Up Stick for Danny



Explore designs that would provide Danny with a device that would facilitate picking up dropped items from the floor.

# Magical Bridge Playground Project



Explore designs to create new play and educational experiences along the playground fence that incorporate multiple senses, actions, and outcomes for all playground users and visitors, especially those with visual impairments and diminished fine motor skills.

# Hide-Away Lap Tray for Nick



Explore designs for a stowable device for Nick that would prevent items from falling from his lap when operating his manual wheelchair.

# Lap Extender for Tony



Explore designs for a wheelchair accessory that will not interfere with propulsion while Tony is carrying or using items such as a food tray or laptop computer.

# Thursday, January 23rd



*Designing Beyond the Norm to Meet the Needs of All People*

Peter W. Axelson, MSME, ATP, RET

Beneficial Designs, Inc.

Director of Research & Development

# Today



## *Perspectives of Stanford Students with a Disability*



Benjamin S. Woodford, Sylvia Colt-Lacayo,  
Gene Sung-Ho Kim, and Austin Gregory Brotman

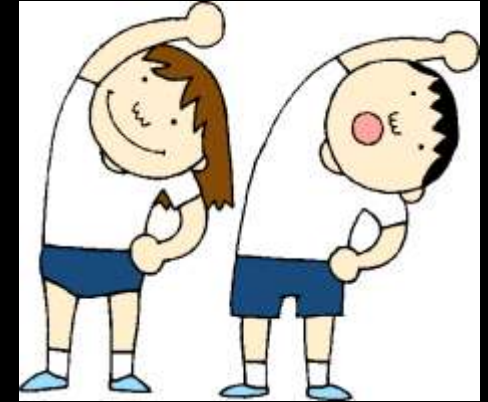
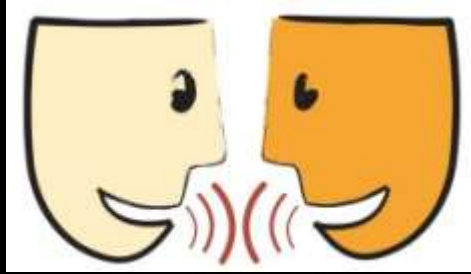
# Short Break





# Break Activities

- ▶ Attendance sheet
- ▶ Stand up and stretch
- ▶ Take a bio-break
- ▶ Text message
- ▶ Web-surf
- ▶ Respond to email
- ▶ Talk with classmates
- ▶ Reflect on what was presented in class



**THANK YOU FOR**



**YOUR ATTENTION.**

